

Radiological Imaging of Multiple Pulmonary Metastatic Nodules: A Case Report

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Abstract

Pleura tumors are not common and prognosis or diagnosis is confirmed imaging and clinical management correlation. In malignant tumors are most common than other tumors. A novel strategy of non-invasive imaging modalities is the use of chest radiography and computed tomography (CT). Indeed, research findings are required for using ultrasonography (USG), PET-CT, and Magnetic resonance imaging (MRI). The invasive technique like organ biopsy is a gold standard but this has its limitations. In this case report, we highlight the known and unknown tumors of pleura delaminated by imaging findings.

Keywords: Pleura; Pulmonary Metastatic Lesion; Soft Tissue; Computed Tomography (CT); Non-Invasive Imaging

Introduction

The non-invasive radiological evaluations of pleural tumors are requiring the complete examination and knowledge of pleural anatomy. The various harmless, and tumor-like situations may involve the pleura [1]. The malignant tumors and pleural neoplasms are most common. The more common tumor-like environment are involving the pleura is pleural thickening. Radiological features of pleural diseases can have varied spectrums including pleural injury, pleural nodular, pleural thickening, pleural plaques, and pleural effusion [2]. The segregation of pleural neoplasms through pulmonary and extrapleural neoplasms is crucial in making the appropriate diagnosis of rare cases.

Case Presentation

A 25 years old female was admitted to a primary health care center, she experiencing chest pain and we suspected soft tissue sarcoma and long duration of abdomen pain. A previous medical record was mentioned in giant cell tumor medial condyle femur underwent curettage bone grafting. We performed for this case

Contrast-enhanced computerized tomography (CECT) Abdomen, Pelvis, and High-resolution CT (HRCT)/ Non-Contrast CT (NCCT) Thorax (Figure 1,2,3 and 4).



Figure 1: Plain scan of Abdomen, Pelvis.

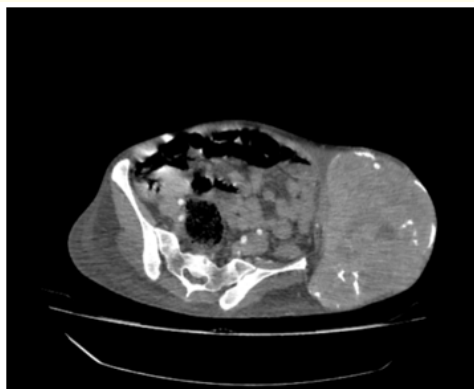


Figure 2: Contrast enhanced CT of abdomen with Squamous gaint cell soft-tissue metastases.



Figure 3: Thorax scano with Pleural effusion.

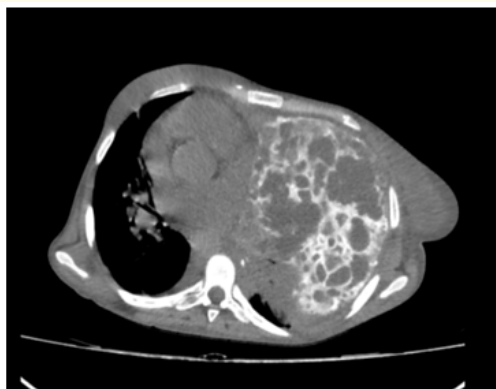


Figure 4: Plain thorax-pleural effusion with adenocarcinoma with noted by lesions on LT lung.

Technical aspect

Plain and IV contrast-enhanced CT scan of abdomen and pelvis was performed after administration of oral contrast and also Plain /HRCT scan of thorax was performed.

CECT abdomen and pelvis

Observations/Findings of case

Mild hepatomegaly was noticed. There is a large focal heterogeneous subcutaneous mass lesion noted in the left side of the pelvis in the subcutaneous plane which measures approximately about 13 x 15 cm. There are few specks of calcification noted in the periphery of the lesion and also in the posterior aspect. Subcutaneous plane edema was noted involving the right gluteal region. The heterogeneous mass lesion in the left thoracic cavity shows post-contrast enhancement with necrotic areas and the mass lesion in the left subcutaneous plane of the left side of the lower lumbar region and around the left hip joint. The subcutaneous plane also shows a similar enhancement pattern with few necrotic areas.

A large heterogeneous mass lesion with calcification was noted in the left thoracic cavity in the visualized portion (refer to CT chest report). Pulmonary nodular lesions were noted in the right lung base on the right side. Minimal right-sided pleural effusion noted. Mediastinal shift noted towards the right side.

Impression

Mild hepatosplenomegaly. Bilateral renal calculi. Soft tissue tumor with calcification noted in the subcutaneous plane in the left side of the hip joint which projecting has a large polypoidal lesion-large metastatic lesion. The subcutaneous plane lesion appears predominantly likely metastatic lesion and a similar lesion is also seen in the left thoracic cavity. Minimal right-sided pleural effusion noted. Mediastinal shift noted towards the right side.

HRCT/NCCT thorax

Observations/Findings of case

The left thoracic cavity is filled with heterogeneous mass lesions with calcification and the mass lesion approximately measures about 20 x 12.4 cm filling the whole of the left thoracic cavity with mediastinal shift noted towards the right side. Minimal right-sided basal pleural effusion. Pulmonary nodular lesions were noted in the right lower lobe. Pleural based lesion was noted in the right upper

lobe. No lytic nor sclerotic lesions were noted in the visualized bones. The trachea appears normal. Major bronchi appear normal. No significant mediastinal adenopathy. No pericardial effusion. Visualized spine appears within normal limits. The chest wall appears intact.

Impression

The whole of the left thoracic cavity is filled with mass lesions with dense ossification and calcification and mediastinum shifted towards the right side. Metastatic lesions were noted in the right lower lobe and pleural base lesions were noted in the right upper lobe. Overall features are of large pulmonary metastatic lesion in the left thoracic cavity with mediastinal shift and multiple pulmonary metastatic nodules noted in the right lung with minimal basal pleural effusion. Because of the previous history of femur-related surgery on the left side with this soft tissue ossified lesions metastases from metastatic lesions of the osteogenic sarcoma to be considered.

Discussion

Lung cancer is one of the most predominant causes of cancer-related deaths [3]. Approaching almost 50% of cases are pleural metastatic at the point of diagnosis, and 60% of clinical management of patients have microscopically and clinically evidence of metastasis at the time of initial tumor treatment. Lung cancer may metastasize to any other organ. The major site of metastases is the liver, adrenal glands, brain, bone, renal, and abdominal lymph nodes. A prospective study by Salvatierra, *et al.* has reported that patients of adenocarcinoma or long-cell carcinoma are more than a higher risk for extrathoracic metastases associated with patients with squamous cell carcinoma [4]. Lung cancer is a significantly more common primary carcinoma site leading to clinically determined soft-tissue (ST) metastases, including colon and renal [5]. In this only one case, we find the lung cancers with metastasis to the ST in the female have reported. These are non-small cell lung cancer; the exposure of smoking status was unknown and they have ST metastasis as the sole presenting the complaint. Soft-tissue metastasis was recognized as a sign of advanced cancer disease and regarded as a grave prognostics indicator for the ST metastasis lesion. Metastases from lung cancers are macroscopically almost identical to metastases of other cellular cancers [6]. Usually, they present as quick growth solitary or multiple nodules with a diameter of measures about 20 x 12.4 cm filling, mobile and covered

with normal skin. Sometimes, exudative or ulcerative lesions are also seen. They usually present with painless nodules [7]. The most frequently find scientific literature reported on locations for ST metastasis has been the back in the chest as well as abdomen [8]. Since the subcutaneous metastasis arising from primary lung cancer is unusual and ominous, new subcutaneous lesion, our cases demonstrated the single new pleural lesion formation of chest mediastinum, this lesion can represent the serious occult pathology, thus warranting a low threshold for tissue biopsy [1]. It was also necessary the demonstrate the importance of a good physical examination. The identification of ST metastasis may have prognostic and diagnostic implications that may provide more accessibility for the organ biopsy site and help to avoid invasive procedures. If identified early, maybe earlier treatment will give a better survival for the patients. The rapid growth of skin nodules is a sign of metastasis. Additionally, the significant weight loss in our female patient indicated a possible malignancy, together with the history of being a chronic smoker. A timely biopsy of the nodule is important in establishing the diagnosis and initiating therapy.

Conclusion

A radiology approach to correct the prognosis and diagnosis of pleural tumors depends on the pattern of involvement the focal or diffuse, bacterial or unilateral, and non-calcified. The main impertinent role of imagining is to identify the pleural thickening, differentiate benign and malignant pleural thickening, and determined the cause if possible. An appropriate clinical history, imaging findings and if required the image-guided biopsy may be used to clinch the diagnosis.

Competing Interests

The author(s) declare that they have no competing interests.

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